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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,540	07/11/2003	Daryl J. Nelson	42P17094	3490

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EXAMINER

CHANG, YEAN HSI

ART UNIT PAPER NUMBER

2835

DATE MAILED: 09/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

BF

<b>Office Action Summary</b>	<b>Application No.</b> 10/617,540	<b>Applicant(s)</b> NELSON, DARYL J.	
	<b>Examiner</b> Yean-Hsi Chang	<b>Art Unit</b> 2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15, 16, 20 and 21 is/are rejected.
- 7) ☒ Claim(s) 14, 17-19 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/9/06 &amp; 6/8/06</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 2-3 and 8 are objected to because of the following informalities: The “a high thermal dissipating object” on line 3 of claim 2, and on line 9 of claim 8 should not use “a” as article if it refers to the same element claimed, otherwise, a different name should be used for avoiding confusion; and “the high thermal element” on line 4 of claim 3 lacks antecedent basis. Appropriate correction is required.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “at least one heat pipe” claimed in claim 13, and the shape, size and spacing of fins of the main section and extended section of the heat sink claimed in claims 17-19 and 22 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure

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is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The disclosure is objected to because of the following informalities: In paragraph [0049], the reference number "404" has been used to designate both "the first fan" and "a high thermal dissipating object".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Bausch et al. (US 6,191,546 B1).

Bausch teaches a method comprising: monitoring a first sensor (40) for a temperature of a high thermal dissipating object (20), and a second sensor (80) for a temperature of a system (including 50), entering a first stage or an intermediate stage in response to conditions as detected by first and second sensors (see figs. 2, 3A and 3C, also col. 5, lines 36-50) (claims 1 and 8); wherein the at least one fan directs airflow towards a main section of a heat sink (50) that is in contact with the high thermal dissipating object (see fig. 1) (claim 2); wherein the conditions detected by the first and second sensors that cause said entering the first stage, intermediate stage, and final stage depend on detected temperatures comparing with a reference temperature (see col. 5, lines 15-25) (claims 3-5 and 9-11); wherein the first and second fans are controlled separately (as shown in fig. 2), they may be operated simultaneously (claims 6-7); and wherein the high thermal dissipating object comprises a CPU (see col. 9, lines 61-62) (claim 12).

6. Claims 23-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Bausch et al.

Bausch teaches a machine-readable medium (61) having stored thereon data representing sequences of instructions (see col. 4, line 64 through col. 5, line 4), the sequences of instructions which, when executed by a processor (60), cause the

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processor to perform the following: monitor a first sensor (40), the first sensor communicatively coupled to a high thermal dissipating object (20, a CPU of the system) in a system (fig. 2) to monitor a temperature of the object, monitor a second sensor (80), the second sensor communicatively coupled to the system (50 is part of the system, and the temperature read by 50 is approximately the temperature inside the chassis shown in fig. 1) to monitor a temperature of the system, enter a first stage, an intermediary stage or a final stage by causing at least one fan in the system to operate in response to conditions as detected by the first and second sensors (see col. 5, lines 38-50) (claims 23-26).

7. Claims 27-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Bausch et al.

Bausch teaches an apparatus (fig. 1) comprising: at least one processor (60), and a machine-readable medium (61) having instructions encoded thereon (see col. 4, line 64 through col. 5, line 4), which when executed by the processor, are capable of directing the processor to monitor a first sensor (40), the first sensor communicatively coupled to a high thermal dissipating object (20) in a system (fig. 2) to: monitor a temperature of the object, monitor a second sensor (80), the second sensor communicatively coupled to the system to monitor a temperature of the system (50 is part of the system), enter a first stage, an intermediary stage or a final stage by causing at least one fan (30) in the system to operate in response to conditions as detected by the first and second sensors (see col. 5, lines 38-50) (claims 27-28); and wherein said

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causing at least one fan to operate comprises causing at least a first (30) and second one (32) of the at least one fans to operate in succession or simultaneously (since fans are controlled by two separate channels as shown in fig. 2, they can operate in succession or simultaneously) (claim 29-30).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 13, 15-16 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bausch et al. in view of Cromwell (US 5,926,370).

Regarding claims 13 and 20, Bausch teaches a system (fig. 2) comprising: an object (20) having high thermal dissipating properties, a first sensor (40 or 42) communicatively coupled to the high thermal dissipating object to determine a temperature of the high thermal dissipating object, at least one second sensor (80 or 82) communicatively coupled to the system to determine a temperature of the system (50 is part of the system, see fig. 1), a heat sink (50) in adjacent contact with the high thermal dissipating object (fig. 1), the heat sink having a main section located nearest the high thermal dissipating object (fig. 1), a first fan (30), a second fan (32), and a memory (61) to store a computer program to detect a first set of conditions and a

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second set of conditions, and cause the first fan and the second fan to operate in accordance with the first and second set of conditions (see figs. 2, 3A and 3C, also col. 5, lines 38-50).

Bausch fails to teach the heat sink including an extended section farthest from the high thermal dissipating object, the sections being connected by at least one heat pipe or a high heat conductivity material.

Cromwell teaches a heat sink (18) including a main section (19) and an extended section farthest from a high thermal dissipating object (13), the sections being connected by at least one heat pipe (heat pipe may be considered as high conductivity material).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the heat sink of Bausch with the heat sink taught by Cromwell for better cooling efficiency.

Regarding claims 15-16 and 21, Bausch further teaches the first fan being coplanar with the second fan (fig. 2) (claim 15); wherein the heat sink comprises fins on the main section (fig. 1) and the extended section (fig. 1 of Cromwell) (claims 16 and 21).

***Allowable Subject Matter***



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10. Claims 14, 17-19 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: The best prior art of record, Bausch et al. (US 6,191,546 B1), and Cromwell (US 5,926,370), taken alone or in combination, fails to teach or fairly suggest a system comprising in addition to other limitations, at least: a first sensor communicatively coupled to a high thermal dissipating object, a one of at least one second sensor being located in close proximity to a first fan, and a second of the at least one second sensor being located in close proximity to a second fan as set forth in claim 14; and fins on a main section of a heat sink being denser than the fins on the extended section of the heat sink as set forth in claim 17; fins on the main section of the heat sink being spaced about equally, and about the same size as the fins on the extended section of the heat sink as set forth in claim 19; and fins on the extended section of the heat sink being twice the spacing as the fins on the main section as set forth in claim 22. Claim 18 is the dependent claim from claim 17.

### ***Correspondence***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yean-Hsi Chang whose telephone number is (571) 272-


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2038. The examiner can normally be reached on 07:30 - 16:00, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the Art Unit phone number is (571) 272-2800, ext. 35. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-8558.

Yean-Hsi Chang  
Primary Examiner  
Art Unit: 2835  
August 30, 2006



**YEAN-HSI CHANG**  
**PRIMARY EXAMINER**